Attachment 3 – Work Plan

Attached is a Work Plan that contains:

- Background information on the ARB IRWM planning efforts to date.
- The tasks that will be completed to update the ARB IRWMP and other related efforts.
- A description of how the ARB IRWMP currently and through the work plan tasks meet the IRWM Program Preferences.

Attachment 3. Work Plan

This Work Plan consists of three primary sections. Section 1 provides background on the adopted American River Basin (ARB) Integrated Regional Water Management Plan (IRWMP), completed improvements since the adoption, and items to be addressed in the update to the ARB IRWMP. Section 1 is organized according to the topics listed on page 15 of the California Department of Water Resources (DWR) Proposition 84 Integrated Regional Water Management (IRWM) Planning Grant Proposal Solicitation Package (PSP). Section 2 describes the tasks needed to complete an update of the ARB IRWMP that fully complies with the DWR Proposition 84 IRWM Guidelines. Section 3 describes how the currently adopted ARB IRWMP and the proposed update will meet the Program Preferences identified in the DWR Proposition 84 IRWM Guidelines.

1. BACKGROUND

The ARB Region has a long-established history of integrated planning. The foundations of the ARB IRWMP began nearly 2 decades ago, with the negotiation (beginning in 1993) and signing of the Water Forum Agreement (Agreement) in April 2000. More than 40 signatories, representing citizens groups, business interests, environmental groups, and water providers signed the Agreement, which documented actions and commitments in seven major elements designed to meet the water supply needs of the region to the Year 2030 and to preserve the environment of the Lower American River below Folsom Dam down to the confluence with the Sacramento River. A number of regional forums and agencies, including the Water Forum Successor Effort, American River Basin Cooperating Agencies, Regional Water Authority (RWA), Sacramento Groundwater Authority, and Sacramento Central Groundwater Authority, were formed to support implementation of the Agreement.

The seven elements of the Agreement established one of the most integrated water resources management efforts of its time. The region's water purveyors, as signatories of the Agreement, made commitments to leave water in the Lower American River for environmental stewardship purposes when it is needed most (dry and critically dry periods). To ensure the health of the Lower American River, the Agreement includes developing a flow standard to ensure releases promote viable habitat and improving existing habitat. To reduce public water supply dependence on the Lower American River during dry periods, the Agreement established a water conservation element to reduce overall demand and a groundwater management element to ensure an alternative supply is available when surface water use is curtailed.

To meet these important commitments, the water purveyors developed a Regional Water Master Plan (RWMP) to identify the facilities and operational agreements necessary to implement the Agreement. The RWMP effort was conducted in two phases. Phase I began in 1998 and identified and described a menu of project and program alternatives for implementing the Agreement north of the American River. Phase II, which concluded in 2003, provided detailed hydrologic, engineering, and legal/institutional evaluations of those projects and programs that best aligned with the goals and objectives of the agencies and the Agreement.

In April 2004, the Regional Water Authority (RWA), a local public agency formed mainly to assist local water purveyors in implementing various aspects of the Agreement, launched an

effort to further integrate the 2003 RWMP. This effort later resulted in the successful completion the region's first IRWMP in May 2006.

Today, RWA has made significant progress toward both implementing and improving that initial ARB IRWMP. The following sections will address the specific issues listed in the Proposition 84 Planning PSP (Page 15 of the PSP), discussing progress since adoption of the May 2006 ARB IRWMP and identifying additional work needed (as applicable) to successfully complete an update to the existing ARB IRWMP. Section 2 identifies specific tasks to be completed as part of the update.

1.1. Regional Water Management Group

The Regional Water Management Group (RWMG), responsible for development, implementation, and update of the ARB IRWMP, builds on a long history of successful regional planning and implementation. The Governance Structure described below will govern future updates and implementation of the ARB IRWMP, and reflects the continuous improvement that has always been envisioned for the ARB Region. The Governance Structure, described in the Region Acceptance Process Application, was adopted in 2009 and is being fully used during the current IRWMP update effort.

1.1.1. Overview

The Governance Structure, responsible for the development, implementation, and update of the ARB IRWMP, consists of a large number and variety of participants and stakeholders. The Governance Structure is designed to balance broad stakeholder involvement with a stable framework for the ongoing development, maintenance, updating, and implementation of the ARB IRWMP. The Governance Structure is flexible and can accommodate changing participants as the interest from specific individuals or groups grows or wanes. Five levels of involvement describe the Governance Structure: Stakeholder Forum, Planning Forum, Advisory Committee, Management Committee, and the Regional Water Authority Board (Figure 3-1**)**. RWA is the RWMG for purposes of meeting statutory requirements. Other participants and groups are critical to development and implementation of the ARB IRWMP. All levels of the Governance Structure are described in the following sections, including individual entities that are part of the Governance Structure and promote projects.

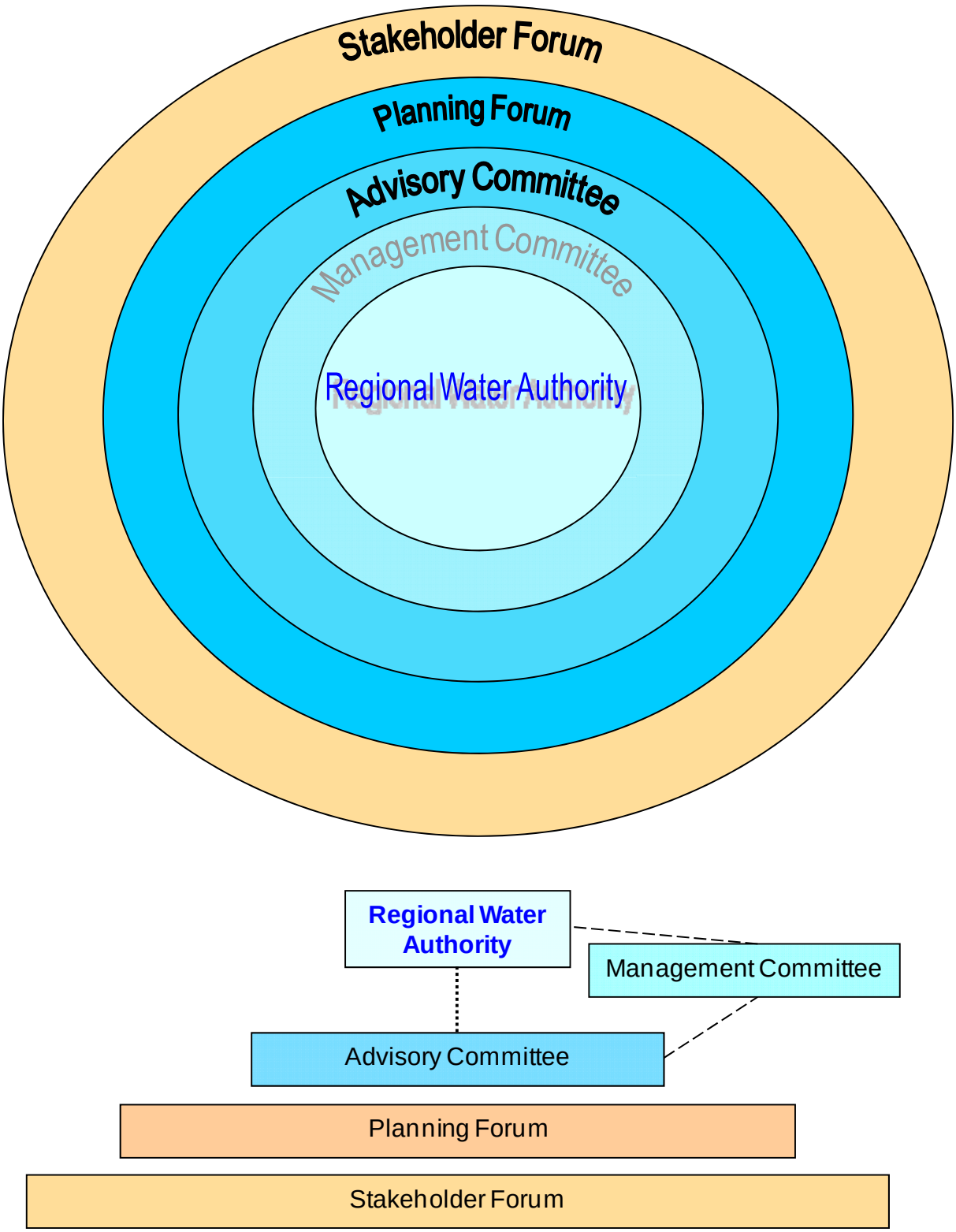

Figure 3-1. Governance Structure

1.1.2. Stakeholder Forum

The Stakeholder Forum is intended to be an open, accessible, and ongoing process whereby stakeholders can voice concerns or make suggestions about the ARB IRWMP and the process for its development or simply stay informed on its status. Stakeholders have been initially identified through the years of collaborative efforts in the ARB Region, such as the Water Forum Agreement. Interested parties are continuously identified through public notifications, members of community and professional groups, websites, and other outreach methods. This group meets at least twice annually, and at other key milestones in the planning process, such as at kickoff of a comprehensive update of the ARB IRWMP. The Stakeholder Forum is designed to provide the broadest possible outreach to those interested in the ARB IRWMP. The primary function of the Stakeholder Forum is to inform the public and give stakeholders the information needed to become more engaged at the other levels of the Governance Structure. Stakeholders participating in the Stakeholder Forum include, but are not limited to:

- Members of the public at large
- Neighboring IRWMP representatives
- Environmental and watershed groups
- Local governments
- Business interests
- Agricultural interests
- Tribal interests
- Flood control agencies
- Water providers
- Wastewater operators
- Academics
- Community groups
- Environmental justice groups

The RWMG intends to keep the level of formality to a minimum, to openly invite participation, and to create an environment where stakeholders are comfortable expressing their interests. When input is received, the RWMG is committed to receiving, addressing, answering, and documenting all stakeholder communications. The RWMG documents comments, communications, and materials received from stakeholders as the ARB IRWMP is further developed, and will include this information as part of the official record for the ARB IRWMP.

The initial Stakeholder Forum was held in November 2009, with more than 30 people in attendance. A second Stakeholder Forum was held on September 1, 2010, and was combined with a Planning Forum (described below). The RWMG is already finding that most stakeholders want to also participate at the planning level, so it is likely that future quarterly Stakeholder/Planning forums will be combined for stakeholder input to the ARB IRWMP Update. This activity is a major component of Task 3, Continue Stakeholder Outreach,

described in the Work Plan tasks in Section 2. Information on the Stakeholder Forum can be found on the RWA website at http://www.rwah2o.org/rwa/programs/irwmp/.

1.1.3. Planning Forum

The Planning Forum is the lowest level at which direct work on the ARB IRWMP and associated projects will occur. Participants in the Planning Forum are self-selected from the Stakeholder Forum. Many Planning Forum participants are project proponents (as described below), but this is not a requirement. The Planning Forum offers an opportunity for stakeholders to be involved in development and review of the ARB IRWMP as follows:

- Provide input to the ARB IRWMP development, especially on defining goals and objectives
- Serve as a technical forum for data sharing
- Provide for collaboration opportunities among project proponents, leading to more integrated, multi-benefit projects
- Assess or develop project concepts to meet regional objectives
- Ensure that project proponents develop necessary project information for inclusion in the ARB IRWMP
- Explore and discuss funding sources for the ARB IRWMP and its implementation.

The initial Planning Forum was held in February 2010, with more than 30 people present. Based on feedback from the initial Planning Forum, a survey was sent to get input of water management priorities to nearly 100 participants on a distribution list for the Stakeholder and Planning forums. The survey had 29 responders and will help inform development of the ARB IRWMP Update. A second Planning Forum was combined with a Stakeholder Forum and held on September 1, 2010. As described under Section 1.1.2, conducting these forums for stakeholder input to the IRWMP update is a major element of the Work Plan tasks in Section 2. Information on the Planning Forum can also be found on RWA's website at http://www.rwah2o.org/rwa/programs/irwmp/.

1.1.4. Advisory Committee

The Advisory Committee serves a number of functions in ARB IRWMP development, most of which relate to ensuring that input from the Stakeholder and Planning forums is reflected in the ARB IRWMP, and that objective criteria are used to evaluate projects. The Advisory Committee is designed to be broadly representative, but to be small enough to effectively make decisions. The Advisory Committee consists of five individuals who have broad knowledge of the issues of the region, and represent more than a single entity or project proponent. Makeup of the Advisory Committee includes:

- A representative identified by each of the counties covered by the plan, chosen to represent broad public interests (Sacramento, Placer, and El Dorado counties)
- The Executive Director of the Water Forum (having a broad knowledge of water supply, environmental, industry, and public interests in the region)

- The Executive Director of the RWA (representing broad water, wastewater, and energy interests in the region).

The Advisory Committee undertakes a number of activities in support of development of the plan, including:

- Reviewing the draft IRWMP to ensure it is consistent with implementing the agreed-upon goals and objectives
- Ensuring that the Stakeholder and Planning forums solicit broad stakeholder input to the ARB IRWMP
- Reviewing projects to evaluate the extent to which they may contribute to the goals and objectives of the ARB IRWMP; which is the initial step in project prioritization
- Providing recommendations to the governing board.

The Advisory Committee is projected to meet at least quarterly, and at key milestones in ARB IRWMP Update development. Representatives for the committee have been identified and the initial committee meeting is planned for October 2010.

1.1.5. Management Committee

The purpose of the Management Committee is to oversee management of the process and logistics of ARB IRWMP development and implementation. The Management Committee is responsible for:

- Collecting and managing financial contributions for development of the IRWMP
- Hiring and managing consultants to complete work toward IRWMP development
- Planning and conducting the Stakeholder and Planning forums
- Convening the Advisory Committee, and providing them with sufficient information to conduct their duties
- Responding to updated IRWM Program Guidelines or other information that may necessitate an IRWMP update.

An effective mechanism is currently in place to manage the implementation of the ARB IRWMP as a program of RWA. The Management Committee includes a number of staff of RWA member organizations, as well as representatives of other agencies and organizations. Current members of the Management Committee include:

- California American Water
- Carmichael Water District
- Citrus Heights Water District
- El Dorado Irrigation District
- Fair Oaks Water District
- Folsom, City of
- Golden State Water Company

- Lincoln, City of
- Orange Vale Water Company
- Placer County Water Agency
- Rio Linda/Elverta Community Water District
- Roseville, City of
- Sacramento, City of
- Sacramento County Water Agency
- Sacramento Regional County Sanitation District
- Sacramento Suburban Water District
- San Juan Water District

The Management Committee endeavors to operate by consensus. However, voting occurs on matters concerning fiscal management of the implementation of the ARB IRWMP. It is expected that water and wastewater agencies will continue to fund the majority of the work on the ARB IRWMP because of their ability to pay. However, funding the ARB IRWMP is not required for participation at any level of the process. The Management Committee has a monthly standing meeting to be able to provide timely oversight of staff and consultants working on the ARB IRWMP.

1.1.6. Regional Water Authority

The RWA serves as the formal governing body for developing and adopting the ARB IRWMP and meets the statutory requirements for a RWMG. RWA comprises 22 members involved in water management, wastewater, stormwater management, power generation and delivery, land-use oversight, municipal government, and habitat management. Most RWA member organizations are represented on the RWA Board by elected members of their individual boards of directors or councils, making them accountable to the public at large. RWA, as a joint powers authority, is a public body committed to openness and transparency in all of its actions. RWA members include:

- California American Water
- Carmichael Water District
- Citrus Heights Water District
- Del Paso Manor Water District
- El Dorado Irrigation District
- Fair Oaks Water District
- Folsom, City of
- Fruitridge Vista Water Company
- Golden State Water Company

- Lincoln, City of
- Orange Vale Water Company
- Placer County Water Agency
- Rancho Murieta Community Services District
- Rio Linda/Elverta Community Water District
- Roseville, City of
- Sacramento, City of
- Sacramento County Water Agency
- Sacramento Municipal Utilities District (Associate)
- Sacramento Regional County Sanitation District (Associate)
- Sacramento Suburban Water District
- San Juan Water District
- West Sacramento, City of[1]

While RWA was not formed specifically for the purpose of IRWMP development and implementation, it is a stable, ongoing institution that is well suited to the task. RWA was established in 2001 to undertake a number of water resources planning efforts and actions that could best be accomplished on a regional basis. The organization has the stability to ensure long-term maintenance and implementation of the ARB IRWMP. The close relationship between RWA and the Water Forum Successor Effort provides an additional avenue for stakeholder involvement through working relationships developed over more than a decade.

The function of the RWA Board of Directors is to consider the input of stakeholders and the recommendations of the Advisory Committee to make final decisions on the content of the ARB IRWMP. RWA formally adopted the ARB IRWMP in May 2006, and also serves to employ the staff and consultants who are engaged in development and implementation of the ARB IRWMP.

1.1.7. Project Proponents

Project Proponents do not represent a formal level of the Governance Structure, but have an important role in development and implementation of the ARB IRWMP. Project Proponents may be any individual or organization that has the authority to participate in an IRWMP and to implement a water resources management-related project. Projects may be in any stage of development, from conceptual to ready-to-implement.

Project Proponents are responsible for:

- Developing water-related project(s) through their own planning process
- Identifying the project's benefits relative to IRWMP goals and objectives

[1] The City of West Sacramento is a member of RWA and the Yolo County IRWMP, but not the ARB IRWMP.

- Providing project information so the project can be considered for inclusion in ARB IRWMP
- Participating in the Planning Forums
- Considering opportunities for integration with other projects, or other alternatives for meeting the project objectives
- Implementing their project and reporting progress to the RWMG

Staff and consultants meet with Project Proponents as necessary to assist them in developing materials for inclusion of their project in the ARB IRWMP.

1.1.8. Staffing

RWA staff has day-to-day responsibility for development of the IRWMP and tracking its implementation. RWA staff:

- Facilitate the meetings for the Management Committee, Advisory Committee, the Planning Forum, and the Stakeholder Forum
- Meet independently with project proponents and stakeholder groups
- Coordinate with neighboring IRWM groups
- Document development of the ARB IRWMP
- Update the project database
- Monitor funding opportunities
- Communicate funding opportunity information to appropriate project proponents
- Track progress of implementation of projects in ARB IRWMP
- Periodically communicate the status of ARB IRWMP implementation

The RWA website (www.rwah2o.org) is used to disseminate information about the ARB IRWMP to the broader public and to keep ARB IRWMP participants informed between meetings. RWA continually seeks out opportunities to reach out to the public and stakeholders on water issues in general and the ARB IRWMP in particular. RWA staff and RWMG participants frequently address public bodies, including city councils and county boards of supervisors.

1.2. ARB Region

The ARB Region (see Figure 3-2) encompasses most of Sacramento County and the lower watershed portions of Placer and El Dorado counties. The boundaries of the ARB Region are defined by the boundaries of the participants' services areas, and include Placer County Water Agency (PCWA), City of Lincoln (Lincoln), and Sacramento County boundaries on the north, the lower watershed boundaries on the east, the Sacramento County boundary on the south (to the west bank of the Sacramento River), and the Sacramento River/Sacramento County line on the west. Most of the region overlies the North American, South American, and the Cosumnes groundwater subbasins and/or receives water supply, directly or indirectly, from the American, Sacramento, and/or Cosumnes rivers. These common water supply sources, and related water

supply issues and physical features link the participating agencies together and make the region appropriate for integrated regional water planning and management. As shown in Figure 3-2, the ARB Region contains many agencies with authority over water. The proximity of these agencies has already resulted in integrated water management activities and the sharing of water systems.

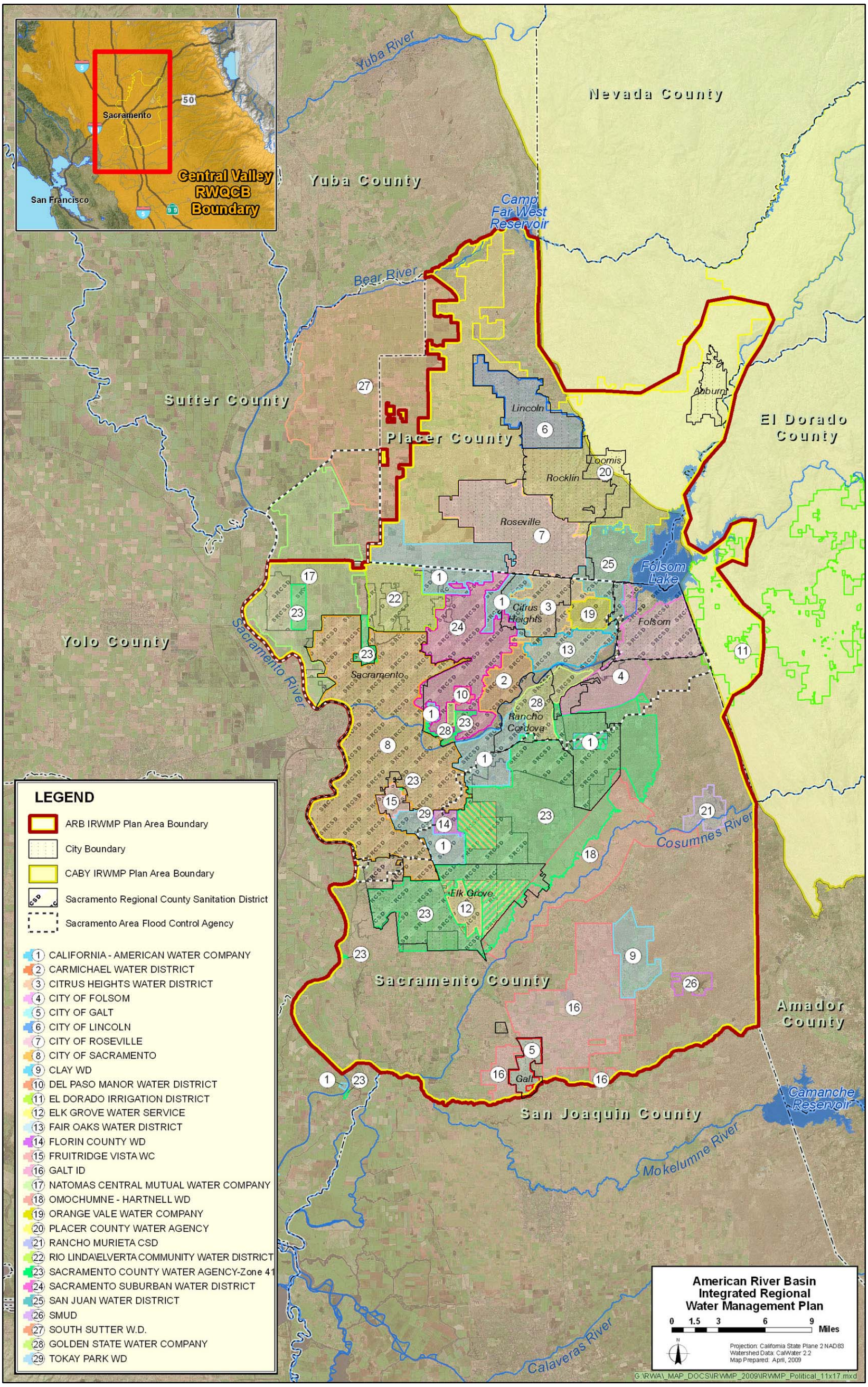

Figure 3-2. American River Basin IRWM Planning Region

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Since the adoption of the ARB IRWMP in May 2006, the eastern boundary has been substantially modified. This was described in detail in the 2009 Regional Acceptance Process application. Essentially, an IRWMP was adopted for the upper watershed (Cosumnes, American, Bear, Yuba or "CABY" group) following adoption of the ARB IRWMP. This resulted in considerable overlap in the upper American and Cosumnes river watersheds. In consultation with CABY and water purveyors within both planning areas, the boundary was revised in 2008 to its current area. Additionally, RWA and CABY executed a Memorandum of Understanding to ensure close coordination in planning.

1.3. The Existing American River Basin IRWM Plan

The ARB IRWMP is the culmination of a multi-year regional effort that defines objectives, sets strategies, and identifies priority integrated water management projects and programs with multiple benefits. The ARB Region encompasses most of Sacramento County and the lower watershed portions of Placer and El Dorado counties (see Figure 3-2). Representing multiple water purveyors, agencies, organizations, and stakeholders, the 2006 ARB IRWMP:

- Investigated a broad spectrum of water resources issues, including water supply (surface water, groundwater, recycled water, and conservation), infrastructure development, stormwater management, water quality, and environmental protection and restoration
- Contains water management strategies to meet regional objectives and statewide priorities
- Documents and prioritizes approximately 180 projects and programs
- Describes methods to measure and monitor performance, financing strategies and accounting, and processes for stakeholder and disadvantaged community involvement and coordination.

As adopted in 2006, the ARB IRWMP was integral to the ARB Region's successful pursuit of a $25 million Proposition 50 Grant to support 14 key implementation projects. Since 2006, the RWMG, described in Section 2.3, has continued its implementation through stakeholder outreach and regular meetings. In 2009, the RWMG developed a Regional Acceptance Process (RAP) application. The RAP application was approved by DWR, making the ARB Region eligible for future IRWM funding opportunities. The RAP application described the ARB Region and its governance.

The ARB Region has been able to implement a significant portion of the projects and programs identified in the RWMP, through substantial financial commitments from the local water purveyors and the State and through other DWR grant programs. The ARB IRWMP planning process has expanded the efforts of the RWMP and continues to develop projects and programs designed to improve water supply reliability, water quality, environmental stewardship, and flood management.

The ARB IRWMP is a living document. Regular updates were always anticipated and the new Proposition 84 guidelines coincide with an update of the ARB IRWMP. It is the goal of the RWMG that an updated and Proposition 84-compliant ARB IRWMP, with the latest data and information, will result from this Work Plan.

1.4. The Process to Identify Stakeholders

The process to identify stakeholders for the 2006 ARB IRWMP consisted primarily of working with those water supply interests that are signatory to the Agreement. Since that time, the RWMP has greatly expanded its efforts to identify stakeholders. In early 2009, outreach was expanded to all stakeholders involved in the Water Forum process. Additionally, the RWMG identified other representatives of local watersheds, stormwater managers, flood managers, park districts, State, federal, and other water-related interests. These interests were invited them to the Stakeholder and Planning forums described in Sections 1.1.2 and 1.1.3. Stakeholders were then surveyed for contact information for additional stakeholders. There is currently a list of more than 100 stakeholders involved in the ARB IRWMP. The RWMG will continue to identify additional stakeholders through the ongoing stakeholder forums and by developing a Web-based IRWM interface to encourage others to participate in a transparent planning environment. These work activities are identified in the Work Plan tasks in Section 2.

1.5. Disadvantaged Communities

The disadvantaged communities (DAC) in the ARB Region were identified by evaluating geographic information system (GIS) files prepared by the U.S. Census Bureau. The data show average income by census tract. DACs are those with an annual median household income (MHI) below 80 percent of the statewide MHI. DACs in the region are shown in Figure 3-3. Each DAC lies within the boundary of a water purveyor, city, or county that has been involved in past regional planning efforts:

- California American Water
- Carmichael Water District
- Citrus Heights Water District
- Del Paso Manor Water District
- Florin County Water District
- Folsom, City of
- Fruitridge Vista Water Company
- Galt Irrigation District
- Placer County Water Agency
- Rio Linda/Elverta Community Water District
- Roseville, City of
- Sacramento Suburban Water District
- Sacramento, City of
- Sacramento, County of

Unlike some parts of the State, the DACs in the region are not isolated communities with specific and unique water supply or quality concerns (for example, the Central Valley community of Allensworth is isolated with few alternatives to its high-arsenic groundwater

supply). The water supply and water quality needs of DACs in the ARB Region are generally served effectively by water purveyor efforts to provide high-quality water supplies to their entire service area and through the regional planning efforts described in this document. Under this structure, DACs are represented through their elected representatives to water district boards, city councils, and county boards of supervisors. Each agency has a variety of activities targeted at DACs including multi-lingual publications of information and community meetings.

However, the DACs may face other challenges such as the lack of infrastructure capacity or the potentially high cost of connection fees for redevelopment projects, increasing user rates for water and wastewater service, and the inability to take advantage of water conservation rebates. The RWMG is actively considering strategies for more fully supporting DACs, which are described in the Work Plan tasks in Section 2.

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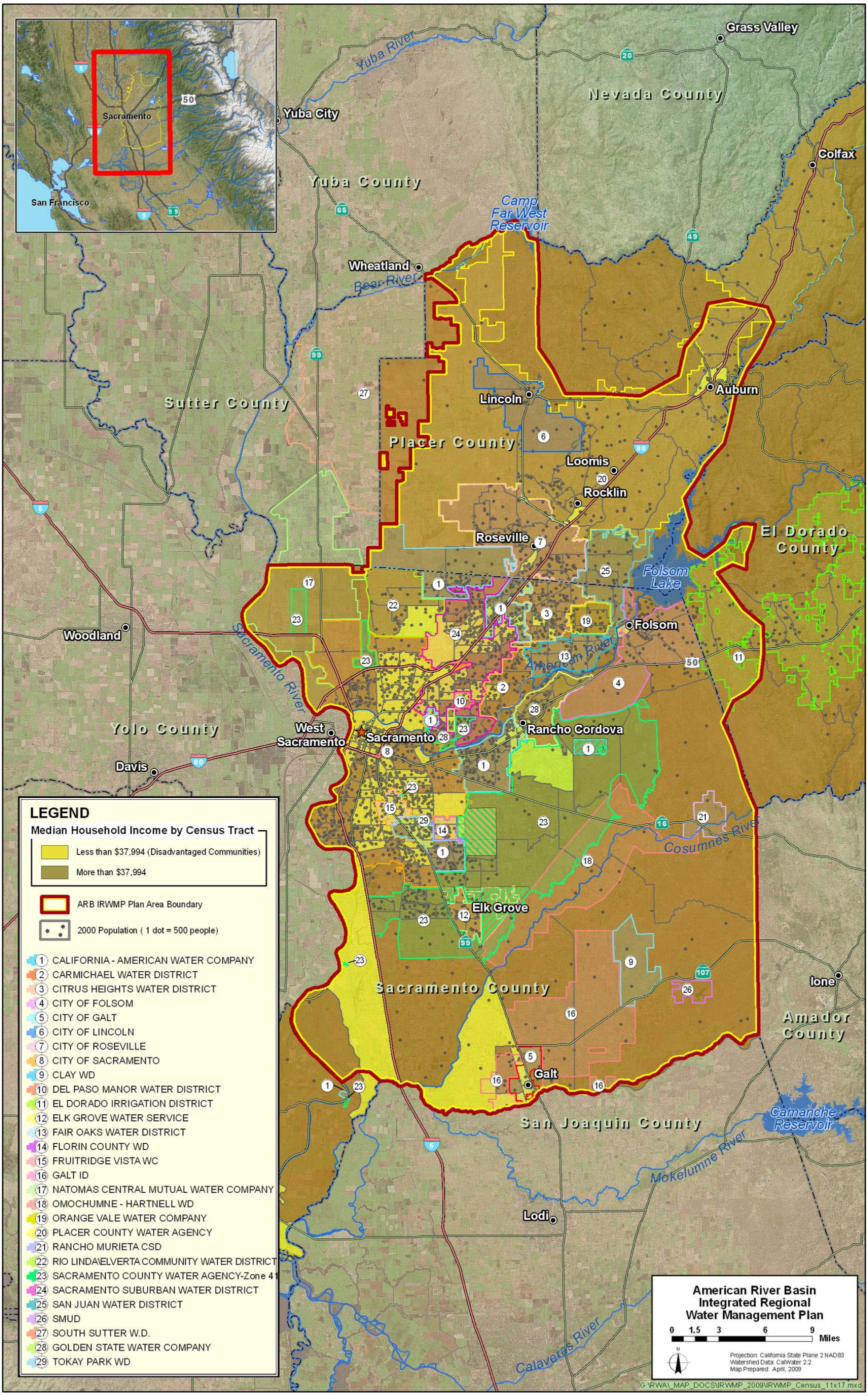

Figure 3-3. American River Basin Disadvantaged Communities

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1.6. Identifying Objectives and Conflicts

The ARB Region, like most of the State, is faced with water resources challenges, most of which relate to the timing and availability of water supplies. The overabundance of water in winter months often results in flooding; water shortages during the long dry summer, especially during drought periods, cause considerable concern for most stakeholders. Environmental needs, in particular sufficient habitat and releases of cold surface water during critical life cycle periods for aquatic species of concern, create increased complexity to providing a reliable water supply to a growing population.

Historically, regional growth and increasing water demands were in direct competition with environmental interests. This was particularly true on the American River, and this conflict was largely responsible for the beginning of the Water Forum process in 1993. The Water Forum Agreement of April 2000 resulted in co-equal objectives for a growing water supply through 2030 while protecting the Lower American River, which largely resolved this issue. However, there still remains the potential for competing interests to emerge if the parties to the Agreement do not demonstrate they are taking steps to honor their commitments. The Agreement resulted in four principle caucuses that continue to meet today: (1) business, (2) environmental, (3) public, and (4) water. Each of these caucuses is relying on the others to implement their commitments. To reduce the potential for these competing interests to emerge, the ARB IRWMP seeks to identify and assist in implementing projects that are supportive of the Agreement. While there will be projects that do not have a direct relationship with the Agreement that will emerge in the ARB IRWMP through time, one of the ARB Region's criterion for projects is that they at least do not appear to directly conflict with the principles of the Agreement.

Understanding the ARB Region's conflicts was key to identifying objectives. Over the last decade and a half the RWMG and its stakeholders have participated in a succession of regional water management planning efforts that helped provide the foundation for the development of the objectives of the ARB IRWMP. In addition to the Agreement, these efforts included: the RWMP, various groundwater management plans (GMP), various water supply master plans, the Freeport Regional Water Project, the City of Roseville's aquifer storage and recovery (ASR) projects, recycled water projects, and Sacramento Area Flood Control Agency's projects. Also, individual ARB IRWMP stakeholders have their own goals, objectives and issues. Common goals and objectives were summarized to form a list of regional objectives.

Based on this information, the initial list of objectives developed in the 2006 ARB IRWMP were:

- Water Supply – Plan for and implement programs and projects that develop the highest level of reliability in public drinking water supplies and equitably distribute capital and operating costs.
- Stormwater and Floodplain Management – Provide the highest practicable level of achieving flood control and stormwater quality in the region.
- Groundwater Management – Protect and enhance groundwater resources and groundwater quality in accordance with adopted GMPs in the region.

- Ecosystem Restoration – Coordinate with agencies developing plans that identify and implement ecosystem restoration projects along sensitive wildlife habitat areas in the region and Bay-Delta.
- Recycled Water – Move forward in the long term planning of recycled water use to improve water use efficiency in the region and reduce total maximum daily loads (TMDL) for certain constituents in receiving waters of treated wastewater effluent.
- Potable Water Quality – Continuously look for innovative solutions in providing the highest level of protection in raw water sources used for potable drinking water supplies.
- Other – Implement regional water management strategies that provide the highest level of understanding and financial support for regional programs and projects to meet the ARB IRWMP objectives.

The RWMG understands the need to make updates to its objectives based on the new IRWM Program Guidelines, updated information, and the addition of new stakeholders and their input. The Work Plan describes a process under Task 4, Develop Objectives with Metrics, in Section 2 to update objectives and to make them more measureable.

1.7. The Process for Developing Regional Priorities

Project prioritization occurs at two steps in ARB IRWMP development and implementation. Projects are considered for inclusion of the IRWMP based on criteria that considers the following factors:

- Project helps meet one or more of the ARB IRWMP Objectives
- Project meets one or more of the ARB Regional Priorities
- Project meets one or more the Statewide Priorities
- Project meets one or more IRWM Program Preferences
- Project does not conflict with the principles of Agreement

In developing the ARB IRWMP, inclusion, rather than exclusion, of projects is the goal, so that the ARB IRWMP can serve as a single, comprehensive portfolio of water resources management projects and programs throughout the region. Staff and other Planning Forum members assist Project Proponents in providing adequate information to document a project's contributions to the goals and objectives of the ARB IRWMP.

The second level of project prioritization occurs as specific regional funding opportunities become available, as shown in Figure 3-4. Since any funding opportunity will have specific criteria defined by the funding agency or organization, it is in the best interests of the region to prioritize projects based both on (1) the importance of the project to meeting regional goals and objectives, and (2) the likelihood of successfully competing for funding. Staff of the RWMG also assist Project Proponents in their independent efforts to seek funding and track implementation of projects funded through any source.

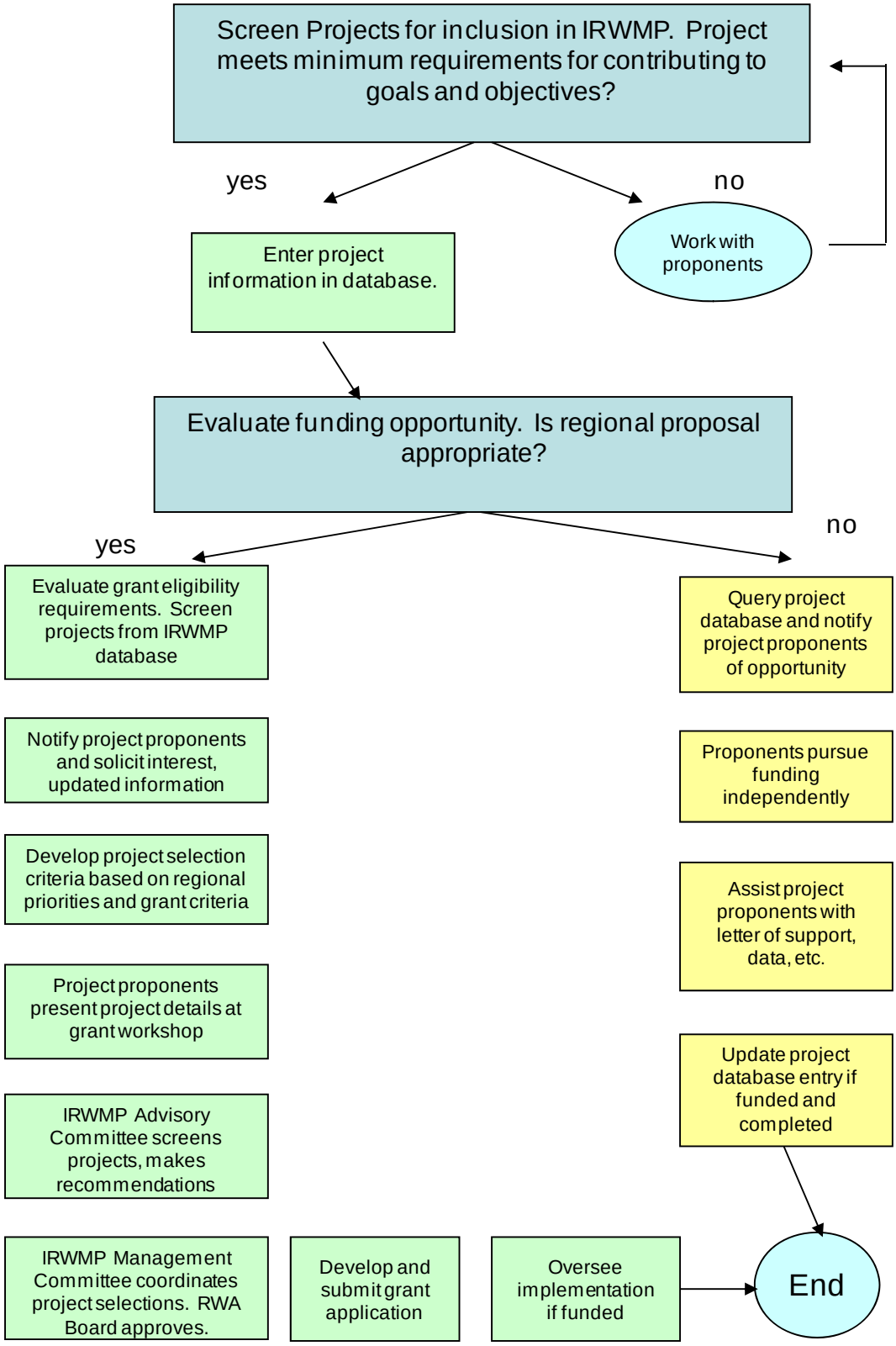

Figure 3-4. Project Prioritization Process

It is anticipated that with the existing regional priorities as the foundation, the development of updated measurable objectives (described in the Work Plan tasks), and the incorporation of Resource Management Strategies (RMS) (described in the Work Plan tasks), the ARB IRWMP update will meet the IRWM Program Preferences and the IRWMP Standards.

The 2006 ARB IRWMP also addressed Statewide Priorities and Program Preferences from the 2004 IRWM Program Guidelines. The current Proposition 84 IRWM Program Guidelines identify Program Preferences, including Statewide Priorities. The RWMG anticipates that the ARB IRWMP will address the current Program Preferences through the updating of the objectives, incorporation of the RMS, and the updating of the IRWMP. These updates are described in the Work Plan tasks.

1.8. Data Collection, Analysis and Management

The hydrologic system surrounding the ARB Region has been extensively monitored for many years. Many of the historical, current, and future monitoring programs pertaining to the ARB Region will be useful to developing and implementing of the plans and projects included in the ARB IRWMP. The requisite data types will include stream flows, surface water deliveries, groundwater elevations, groundwater pumping, precipitation, water demands, locations and sizes of water-related facilities, political and agency boundaries, land use, contaminant plume locations and extents, locations of sensitive habitats and species, and hydrogeologic data. These data will be collected from various federal, State, and local agencies. Data may also be collected from existing numerical models, such as CALSIM, IGSM, IWFM, HEC models, and other hydraulic and hydrologic models. Working with the various federal, State, and local agencies, the ARB IRWMP effort has, and will continue an exhaustive search for all data relevant to the ARB IRWMP. Any data gaps that are identified will need to be filled through new monitoring activities, new studies, and/or installation and use of new measurement systems. The data will include at a minimum, any relevant to surface water, groundwater, stormwater, wastewater, and ecosystem restoration.

1.8.1. Process for Gathering and Managing Data

The ARB IRWMP is in the ongoing process of evaluating future data needs. Research strategies are being developed and/or implemented to gather all data known to be necessary for the ARB IRWMP. The RWMG will then store, evaluate, analyze, and summarize the data as a part of the ongoing IRWMP development process. The aggregation and analysis of the required data for each individual project or program will be the responsibility of the agency or organization that has primary development responsibility for the specific project. RWMG will serve as a clearing-house for all relevant data and will use ongoing data collection systems in assessing the performance of various projects.

One tool that will be useful for the data management is the SHEDTOOL Data Management System (DMS) application currently being used by the one of the ARB IRWMP participants, SGA. SHEDTOOL is a stand-alone application that allows entry, storage, retrieval, and presentation of groundwater data. SHEDTOOL also interfaces with groundwater models to provide for calibration and future forecasting of groundwater and surface water behavior. SHEDTOOL was developed under contract with the U.S. Army Corps of Engineers with additional assistance from DWR.

In addition to SHEDTOOL, a GIS database will be used to store and manage spatial data. Data stored and managed within GIS will include political and agency boundaries, watershed boundaries, land use designations, census tract, contamination plume locations and extents, locations of sensitive habitats and species, and locations of water resource infrastructure, interceptors, water storage facilities, water and wastewater treatment facilities. GIS data are developed and maintained in consistent formats (metadata) for consistency with other regional and statewide GIS data (e.g., Sacramento Area Council of Governments (SACOG)).

The RWMG also maintains a project database of all its identified projects and programs. The project database contains information about a project's type, financing, objectives, strategies, status, schedule, location, and contact information. The Work Plan contains a task (Task 5) to develop a Web-based IRWM interface to allow stakeholders to see project data with a map interface and to enter in new project data. This will be an essential tool in ensuring an environment for stakeholders to collaborate and to add and manage data regarding IRWM projects.

Data generated through the implementation of specific projects will be the responsibility of the Project Proponent. For instance, the local agency in which a proposed recycled water treatment plant is located will be tasked with monitoring the quality of the recycled water and measuring the quantity conveyed to the various land uses. Similar monitoring plans and protocols are in place where appropriate for each priority project presented in this report. The ARB IRWMP will integrate data collection efforts wherever possible, taking advantage of opportunities to combine efforts and share information, thereby reducing overall costs to the region.

1.9. Employing Integrated Resource Management Strategies

The adopted 2006 ARB IRWMP was completed before development of DWR's RMS, so they were not employed for that effort. However, the RMS can serve as a solid foundation for identifying and organizing projects in an integrated fashion. In the ARB IMRWP update, each of the strategies will be considered and organized into objective areas. Where feasible, specific quantified goals will be developed for the RMS. These work activities are identified in Subtask 1.2, Incorporate Other Elements, and Task 4, Develop Objectives with Metrics, in the Work Plan tasks.

1.10. IRWMP Implementation, Impacts, and Benefits

1.10.1. Implementation

The ARB IRWMP will be implemented through short- and long-term projects and programs designed to achieve the regional objectives described herein. Through short- and long-term regional project implementation, the ARB IRWMP participants will begin to achieve the regional objectives. The implementation schedule for each prioritized project and program was summarized in the 2006 ARB IRWMP and project database, but the implementation schedule will need to be updated as part of the ARB IRWMP update, as described in the Work Plan tasks.

Linkages exist among most of the projects and programs and therefore implementing projects in an integrated manner is most beneficial to the region. Other regional projects also provide linkages that include benefits among the projects. For example, the projects described on the Cosumnes River are all related, and provide synergistic benefits among the projects. Flow monitoring and modeling will provide data that can be used to protect riparian habitat in the river

corridor. Better understanding of life-sustaining flows will enhance not only the fisheries habitat, but also vegetation and wetlands resources. This environmental enhancement will benefit endangered species in the region.

1.10.2. Impacts and Benefits

Impacts and benefits from the ARB IRWMP and its component projects are assessed as part of the planning process. This section describes the impacts and benefits from IRWMP implementation at a screening level including:

- Potential benefits and impacts from implementation of the ARB IRWMP and its component projects within the region and in adjacent areas
- Advantages of regional planning as opposed to individual local efforts
- Interregional benefits and impacts
- Benefits to disadvantaged communities
- Impact/benefits to other resources (such as air quality and energy).

1.10.2.1. Benefits from Implementation

Implementation of the projects proposed in the ARB IRWMP will result in quantitative and qualitative benefits for the ARB Region and beyond. In addition to direct quantitative benefits such as new or more reliable water supplies, there are benefits from avoiding the negative impacts of not implementing the projects included in the ARB IRWMP. Quantitative benefits, such as water supply yield, are summarized in the ARB IRWMP. Qualitative benefits are summarized for each project and include: improved water quality, water supply reliability, improved levee system integrity, improved recreation, habitat protection, improved drainage, groundwater quality (by mitigating migration of regional contaminant plumes), reduction/prevention of groundwater overdraft conditions, ecosystem restoration, increased operational flexibility, reduced flood risk, and public and professional (water-related) education.

1.10.2.2. Impacts from Implementation

Implementation of the projects in the ARB IRWMP will have both quantitative and qualitative impacts and benefits. The primary quantitative impacts to the region are financial, related to costs to the community for implementing a project or program. Identified qualitative impacts to the ARB Region were mostly construction related.

In addition, there could likely be additional impacts if the ARB IRWMP and/or its component projects are not managed or implemented well. These impacts include:

- Increased project/program costs to agencies and rate payers
- Delayed construction/operation of planned facilities and programs, and therefore delayed water supply and other benefits
- Delayed construction/operation of planned facilities leading to increased negative impacts on surface water quality and groundwater quality, including greater contaminant plume migration and related impacts

- More limited operational flexibility, particularly in times of drought, causing increased water rationing and associated pressure on water users and the environment.
- Delayed implementation of environmental restoration or habitat management, resulting in declining health of the region's ecosystems.

1.10.2.3. Advantages of Integrated Regional Planning

Implementation of the ARB IRWMP will provide numerous benefits, provide cost savings and minimize impacts to the environment in the ARB Region. In addition to the project-specific benefits anticipated to accrue from project implementation, additional benefits are expected to result from a regional approach to planning, including:

- **Increasing Regional Understanding.** By working together as a cohesive group, each agency or participant gains a deeper understanding of the effects of their projects on others. This in turn assists agencies and participants in developing projects that minimize the types of conflicts that can ultimately prevent projects from gaining the support necessary for successful implementation.
- **Economies of Scale**. Many of the agencies in the region use common sources, or combinations of sources of water supply, which also serve environmental needs. As a result, many agencies and stakeholders share the same water management challenges. By developing integrated regional approaches to water management, resources can be pooled, maximizing efficiency on a regional scale. In this way, existing resources can be optimized, duplication of efforts can be avoided, and larger scale efforts can be established, potentially providing a greater benefit than from individual efforts alone.
- **Fostering Support**. When planning is conducted on a regional scale, more parties are involved in projects, more diversity of opinion is introduced in the process, which generally yields better, more informed projects. In collaborative processes, each participant brings his or her own values and priorities to the process which is ultimately reflected in the plan. The result is projects that not only minimize impacts to more parties, but incorporate benefits to more parties as well. When more benefits are realized and impacts avoided, more support follows.

1.10.2.4. Impacts/Benefits to Other Resources

The ARB IRWMP has the potential to benefit resources beyond the regional water resources, which it most directly affects. By integrating the water management strategies as described, it is possible to benefit air quality and energy resources as well, even if indirectly. The environmental benefits of improving the quality of surface water resources and the related ecosystems will contribute to the improvement/enhancement of shaded riverine habitat. Water quality improvements also benefit the environments downstream in the Delta and provide improved export water quality. Enhanced tree cover, while viewed as a habitat enhancement, will also directly benefit regional air quality. By optimizing water supply operations and implementing conjunctive use, additional surface water supply will be available for hydropower generation to benefit statewide energy resources. Past efforts in the region to improve water supply reliability have benefitted other regions through transfers.

Project-specific environmental documents have been prepared for those efforts whose impacts were viewed as potentially significant. The impacts associated with the projects were limited to construction-related impacts that would be mitigated. The construction impacts include construction noise, dust, and traffic impacts to adjacent neighborhoods. However, these impacts would be addressed through mitigation measures such as work hour limitations, dust control requirements, and traffic plans. As described above, the benefits of the projects to other resources in the region are significant. The integrated projects have a positive impact or benefit to the regional environmental resources including recreation, air quality, energy resources, fisheries habitat/riparian corridors, and wetlands.

1.11. Comparison of Existing ARB IRWMP to Current IRWMP Standards

The ARB IRWMP Update will address each of the IRWMP Standards by relying on previously developed information (2006 ARB IRWMP and the RAP) and newly updated information developed through the completion of the Work Plan tasks. Table 3-1 shows each of the IRWMP Standards, what section they were addressed in the 2006 ARB IRWMP and the RAP, and which tasks will provide new or updated information for the ARB IRWMP Update. It should be noted that all of the IRWMP Standards will be addressed in ARB IRWMP Update (Task 8), but only some of the standards have specific tasks in the Work Plan, such as climate change (Task 1.3) and objectives with metrics (Task 4), because they require additional effort to make the ARB IRWMP Update compliant with the IRWMP Standards in the new Guidelines.

Table 3-1. IRWMP Standards

IRWM Plan Standard	Addressed in 2006 ARB IRWMP	Addressed in RAP	Updated by Work Plan Task
Governance	1	5	
Region Description	2	6	1.1
Objectives	3		4
Resource Management Strategies	4, 5		1.2
Integration	4		4, 5, 6, 7
Project Review Process	5	5.10	5, 6, 7
Impact and Benefit	7		
Plan Performance and Monitoring	8		
Data Management	9		5
Finance	10		
Technical Analysis	8		
Relation to Local Planning	12		
Relation to Local Land Use Planning	12	7.3.16	2
Stakeholder Involvement	13	3, 4	2, 3, 5
Coordination	1, 13	3, 8	
Climate Change			1.3

2. WORK PLAN TASKS

The following specific tasks describe activities that will be completed by the RWMG. The result of these tasks will be an updated ARB IRWMP that considers the Proposition 84 IRWM Guidelines and thus addresses the IRWM Program Preferences. The ARB IRWMP does not specifically represent implementation of a project. Projects identified in the IRWMP will complete applicable CEQA or NEPA environmental documentation, including Native American tribal communities notification as applicable, prior to moving forward with implementation. To support involvement and participation of Native American tribal communities in the IRWMP update effort, a representative from the United Auburn Indian Community (UAIC), which includes Miwok and Maidu tribes, has been invited to participate in the effort, and staff will meet separately with tribal representatives to discuss water needs. The Placer County Water Agency, a participant in the ARB IRWMP, has actively worked with UAIC on water supply and water quality projects to meet the needs of tribal residents and business.

Task 1: IRWMP Update Tasks

Subtask 1.1: Update Basic Data

Purpose:

The purpose of this task is to update the data and information used to describe the ARB Region. Much of the data is current through 2006 and should be updated to 2009, if possible.

Description:

Data will be collected up to and including the Year 2009 (if available) to update all the tables, charts, and graphs in the 2006 ARB IRWMP to be consistent with the Proposition 84 Guidelines. These data include, but are not limited to:

- Changes to the ARB IRWMP planning boundary (consistent with the RAP application)
- Updated information and data from other local and regional planning efforts and programs, such as:
    - Master Plans
    - Urban Water Management Plans (2010 updates)
    - General Plans
- Major water-related infrastructure constructed since 2006
- Social and economic data
    - Land use
    - Population
    - Employment
    - Housing
    - Income
    - Cultural resources

- Water resources setting
    - Climatology
    - Hydrology
    - Hydrogeology
- Ecological and environmental resources
- Water supplies and demands
    - Urban, agricultural, and environmental water demands
    - Surface water, groundwater, recycled water, and other water supplies
    - Water conservation measures (Assembly Bill 1420 compliance)
    - Metering policies
- Water quality
- Flood and stormwater management measures

Deliverables:

- Updated descriptions and tables of background data for inclusion into the Draft ARB IRWMP Update (see Task 8). The data and information will be reviewed and revised as part of the Final ARB IRWMP Update (see Task 8).

Subtask 1.2: Incorporate Other Elements (e.g., Resource Management Strategies)

Purpose:

The purpose of this task is to document other new elements that factor into the ARB IRWMP planning and implementation. These include RMS from the California Water Plan Update 2009. The RMS encourage diversification of water management approaches as a way to mitigate for uncertain future circumstances. The RMS are grouped into seven categories:

- Reduce Water Demand
- Improve Operational Efficiency and Transfers
- Increase Water Supply
- Improve Water Quality
- Improve Flood Management
- Practice Water Resources Stewardship
- Other

The IRWMP will consider input from stakeholders in developing objectives (Task 4), to determine the RMS appropriate to the ARB Region.

Description:

- The IRWMP will describe how the RMS were considered in the planning and implementation of the ARB IRWMP Update, including how they will be implemented to help achieve the ARB IRWMP objectives.
- The ARB IRWMP Update will show which RMS are relevant to the ARB Region and how they are employed by each objective, project, or program (see Task 8).

Deliverable:

- A draft Technical Memorandum (TM) will be developed to document the inclusion of the RMS into the development of the objectives and the ARB IRWMP. The TM will be reviewed and revised as part of the Final ARB IRWMP Update (see Task 8).

Subtask 1.3: Address Climate Change

Purpose:

California's water resources are already experiencing the effects of climate change. The State is promoting various efforts to mitigate the effects of climate change on water supply, water quality, ecosystems, water and power operations, flooding, drought, and sea-levels. The State is also promoting reductions the amount of greenhouse gas (GHG) emissions. Several efforts are already being used by the ARB Region to adaptively manage its resources as the climate changes. Through modeling and qualitative data gathering and analsyis, the purpose of this task is to:

- Evaluate the impacts of climate change on the water resources in the ARB Region. To better understand how the future reliability of the groundwater and surface water systems in the region may be affected by the climate change, the Sacramento Area Integrated Water Resources Model (SacIWRM) will be used in conjunction with assumptions and results of the CALSIM Climate Change Scenario published by the DWR.
- Document existing and future efforts of the ARB IRWMP participants for adapting to the effects of climate change.
- Document existing and future efforts to reduce GHG emissions from water and wastewater operations.
- Develop "no-regret" adaptations, in conjunction with objectives, and processes to update the IRWMP as more information, data, and tools for assessing climate change impacts are developed.

Modeling Description:

DWR has developed a CALSIM scenario that includes the 2029 delivery estimates based upon a single median future climate projection. The future projection is selected from among 12 mid-century climate projections contained in *Using Future Climate Change Projections to Support Water Resources Decision Making in California, by Chung et al., 2009.* This CALSIM simulation along with the associated MPICHAM5 global climate model run, will provide information regarding changes to precipitation patterns, unimpaired flows to system reservoirs, reservoir releases, and surface water deliveries.

SacIWRM is an integrated hydrologic model that simulates the groundwater and surface water resources in the ARB Region from Bear River in the north to the Mokelumne River in the south. The model uses various input data, most significant of which from a water supply perspective are: precipitation, streamflows, land use, agricultural and urban water demand, surface water deliveries, groundwater production for beneficial use, remediation operations, and geologic and aquifer conditions.

This analysis will combine information from the CALSIM and the associated supporting models along with the SacIWRM to assess the effects of global climate change on the ARB Region's surface water and groundwater resources. The results of this analysis will allow an assessment of the level of reliability of the groundwater and surface water facilities in the ARB Region. Specifically, changes in the streamflow and groundwater levels, as well as changes to groundwater storage will be evaluated in the context of the Water Forum Agreement and the Lower American River Flow Standard.

Development of Baseline Conditions

Develop a 100-year hydrologic record with the future level of land and water use in the ARB Region to be consistent with the CALSIM scenario. This Future Condition Baseline will be verified to ensure that it reflects the latest information on the projected water supply facilities, including the groundwater wells, remediation operations, water conservation assumptions, recycled water planned operations, and surface water deliveries throughout the model area. The Future Condition Baseline scenario will be run assuming no climate change for comparison to simulations with climate change scenarios developed from CALSIM.

Global Climate Change Scenarios

To simulate the conditions of the basin under a single median future climate change projection, two scenarios will be developed:

- Scenario 1 – Global Climate Change Scenario with Baseline Water Demand and Supplies
    - This scenario will represent the conditions of the basin assuming that land and water use conditions stay as in the baseline. However, the hydrologic conditions, including streamflows, precipitation, reservoir operations, and surface water supplies will reflect those under the climate change scenario.
- Scenario 2 – Global Climate Change Scenario with Reduced Water Demand
    - This scenario will represent the conditions of the basin assuming that land and water use conditions would be modified to adapt to the changing climatic conditions, such that the basin would stay in balance within the framework of Water Forum Agreement, to the greatest extent possible. However, the hydrologic conditions, including streamflows, precipitation, reservoir operations, and surface water supplies will reflect those under the climate change scenario.

Prepare Modeling Technical Memorandum

A TM documenting the assumptions, methodology, and results of work completed. The TM will include sub-regional summaries (representing water supply service areas) of impacts to supply and demand, groundwater elevations, and streamflows to allow for discussion with water agencies on system vulnerabilities.

Project Management and Coordination

The modeling portion of this subtask includes time for management and coordination of the project with RWA staff, as well as preparation of progress reports and invoices. The coordination will include preparation for and attending three meetings or conference calls with the project team members, as well as preparation and attendance at two stakeholder forums for presentation.

Qualitative Analysis Description:

Qualitatively assess climate change impacts on water quality, ecosystems, water and power operations, flooding and drought, and sea-level rise. The information will be documented in the ARB IRWMP.

Once the vulnerabilities are identified, they will be ranked to provide information for the objectives development (Task 4). This ranking will help to target the highest ranked vulnerabilities to climate change in the region.

The project prioritization process will be updated to include adaptation to climate change and potential reduction of GHGs as criteria for evaluating projects and programs.

A survey for the members of the RWMG and the various levels of governance (Stakeholder Forum, Planning Forum, Management Committee, and Technical Advisory Group) will be developed to document in the ARB IRWMP all of the efforts taken to address climate change. These efforts may include:

- Hybrid fleets
- Solar energy
- Leadership in Energy and Environmental Design (LEED) buildings
- Hydrologic modeling
- Other efforts to reduce greenhouse gas emissions

Deliverables:

- A TM documenting the assumptions, methodology, and results. The TM will include sub-regional summaries (representing water supply service areas) of impacts to supply and demand, groundwater elevations, and streamflows to allow for discussion with water agencies on water supply system vulnerabilities. The data and information will be reviewed and revised as part of the Final ARB IRWMP Update (see Task 8).
- A draft TM will be developed to summarize the qualitative analysis. The data and information will be reviewed and revised as part of the Final ARB IRWMP Update (see Task 8).

Task 2: Plan for Expanding the Strategy for Identifying/Including Disadvantaged Communities

Purpose:

The purpose of this task is to expand the strategy for identifying and including DACs within the ARB IRWMP. DACs within the service areas of utilities of the ARB Region face different

challenges than some areas, like the San Joaquin Valley, where there are entire towns without access to clean and affordable water supplies or adequate wastewater facilities. In the ARB Region, the challenges may include the high cost of connection fees, the affordability of water and wastewater rates, or the inability to take advantage of water conservation measures. Therefore, the ARB Region will look to work with environmental justice organizations and its own stakeholders to develop strategies for identifying and being more inclusive of disadvantaged communities in the ARB IRWMP planning and implementation process.

Description:

Strategies will be expanded and applied for identifying and including disadvantaged communities into the IRWM planning and implementation process. These strategies may include, but are not limited to:

- Identifying DAC representatives by:
    - Contacting all local water and wastewater service for DAC contact information within their service areas
    - Contacting all cities, counties, chambers of commerce, including ethnic chambers, for DAC contact information within their jurisdictions
    - Contacting Environmental Justice Coalition for Water and other environmental justice groups
    - Contacting other existing stakeholders for DAC contact information within their jurisdictions
- Identifying where "lifeline" rates exist for water and wastewater services within the region
    - Surveying water and wastewater service providers regarding issues for establishing "lifeline" rates (e.g. Proposition 218)
- Evaluate and document if there are impediments associated with providing water and wastewater service to development or redevelopment in DACs by surveying water and wastewater service providers and representatives from DACs
- Coordinate with the Sacramento Area Council of Governments (SACOG) to identify infrastructure capacity needs for redevelopment in DAC areas
- Identifying potential projects or programs that could directly benefit DACs by surveying water and wastewater service providers and representatives from DACs (e.g., direct install high-efficiency toilet programs, reduced connection fees

Deliverable:

- A draft TM will be developed to describe the disadvantaged community outreach actions, existing programs, and recommendations to address specific DAC needs. The TM will be reviewed and revised as part of the Final ARB IRWMP Update (see Task 8).

Task 3: Continue Stakeholder Outreach

Purpose:

The purpose of this task is to continue stakeholder outreach activities through interactive quarterly forums (Stakeholder/Planning) and other group meetings throughout the update process and beyond. The ARB IRWMP update and its continued implementation will be greatly enhanced by interacting with additional stakeholders for a comprehensive, integrated water management perspective. The ARB IRWMP has many examples of reaching out to the various stakeholders of the ARB Region. Forums in November 2009 and again in February 2010 were convened to brief stakeholders on the IRWMP effort and receive input. The RWMG was made aware of additional stakeholders that may have an interest in participating. In May 2010, RWA developed and released a survey to more than 100 individuals representing federal, State, local, nongovernmental, and nonprofit interests. The intent of the survey was to gain the perspective of stakeholders on how the region is progressing on a variety of water management topics and to identify specific individuals willing to participate in updating the objectives. The latest forum was held on September 1, 2010, to review the results of the survey and to update stakeholders on progress. Representatives of DWR's North Central Region Office have actively participated in these forums. As described at the beginning of the Work Plan, this includes outreach to the United Auburn Indian Community.

Description:

- Throughout the development of the ARB IRWMP Update, quarterly Stakeholder/Planning forums are planned to keep stakeholders informed of progress and to receive their input.
- Additionally, direct meetings with those that specialize in specific areas (for example, stormwater quality) or represent distinct stakeholder groups to gain insight on areas that need to be more fully integrated into the IRWMP update effort. The outreach will include working with these specialists to obtain information relevant to establishing quantifiable goals under objectives as part of Task 4.

Deliverable:

- Agendas, meeting material, and meeting summaries will be developed for each forum.
- Records of the outreach activities and outcomes of stakeholder input will be recorded into the Final ARB IRWMP Update (see Task 8).

Task 4: Develop Objectives with Metrics

Purpose:

IRWMP objectives must be clear and measurable to address the various water management issues identified by the RWMG and its stakeholders. The objectives also help determine the Resource Management Strategies to be employed (described in Task 1.2) and implementation of projects and programs (described in Tasks 6 and 7). The 2006 ARB IRWMP objectives will need to be updated in order to ensure that they address the various water management issues of the ARB Region, are consistent with the ARB IRWMP overarching goals (Basin Plan Objectives, 20X2020 water efficiency goals, and IRWMP Standards), and are measureable. The purpose of this task is to review the 2006 ARB IRWMP objectives, collaborate with the various

levels of the ARB governance, and reformulate the ARB IRWMP objectives. Also, because the objectives must be measureable, metrics must be established to determine if an objective is being met through the IRWMP implementation.

It is anticipated that the ARB Region will have objectives developed for water supply, water quality, water demand management, flood/floodplain management, natural resources management, and other areas (see Figure 3-5). The objectives will include quantitative goals where feasible. Throughout development of objectives, the Stakeholder and Planning forums described in Task 3 will be used to obtain stakeholder input and comments on objectives. Spefic measurable goals (metrics) will be developed for each objective area. Figure 3-6 shows the different metrics that will be established for each objective area. The graphic is taken from the current stakeholder project input form. As projects are collected stakeholders identify what goals their projects help the region meet. However, through the completion of this and other tasks the ARB Region will greatly improve the integrated planning by establishing quantifiable goals and prioritizing projects by how well they help the region meet its goals. An example goal under Water Demand Management could be to achieve a 20-percent reduction in per capita urban water use by the Year 2020. Note that these objective goal areas as shown in Figure 3-6 are already closely aligned with existing DWR RMS. This effort will result in objectives with metrics for the region that are closely aligned with State priorities.

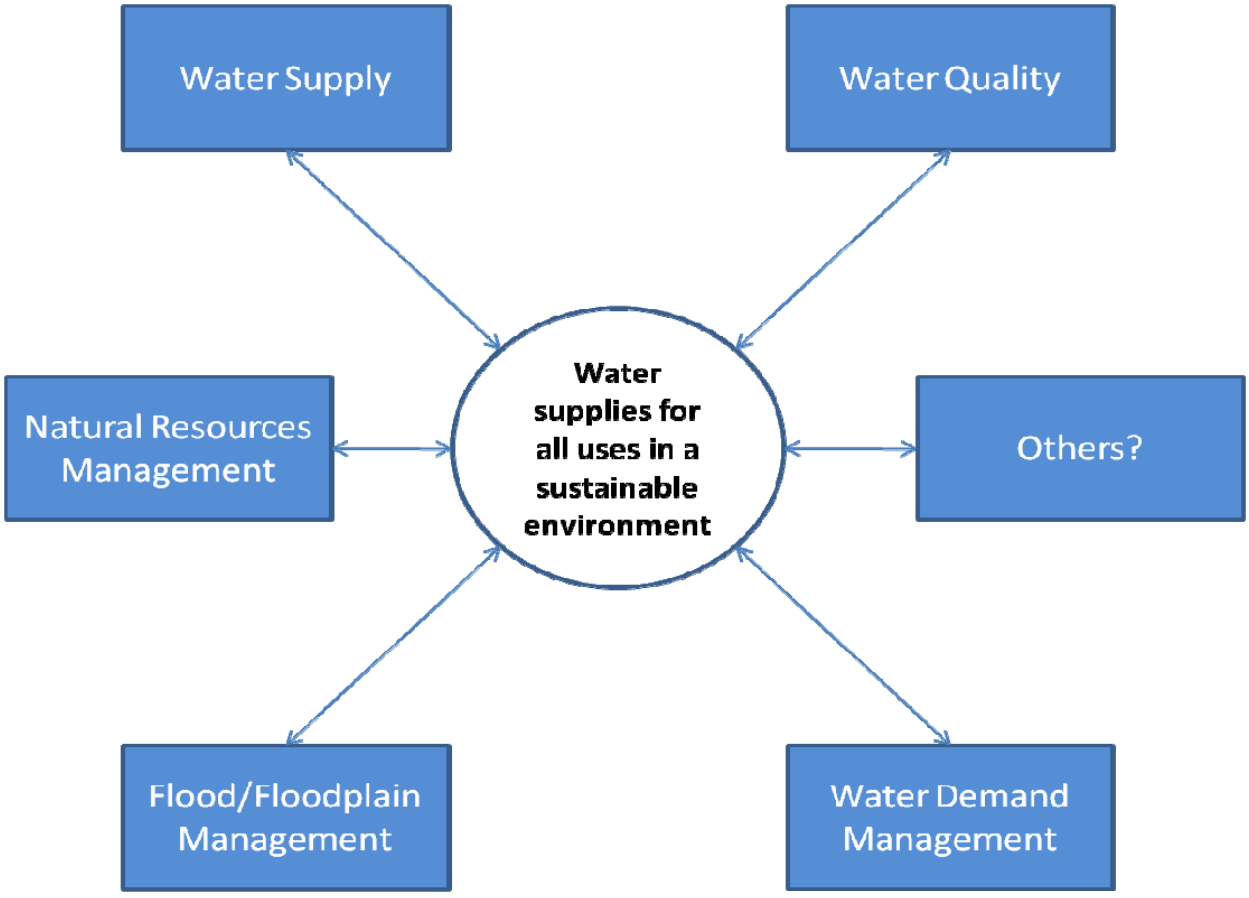

Figure 3-5. Objective Categories

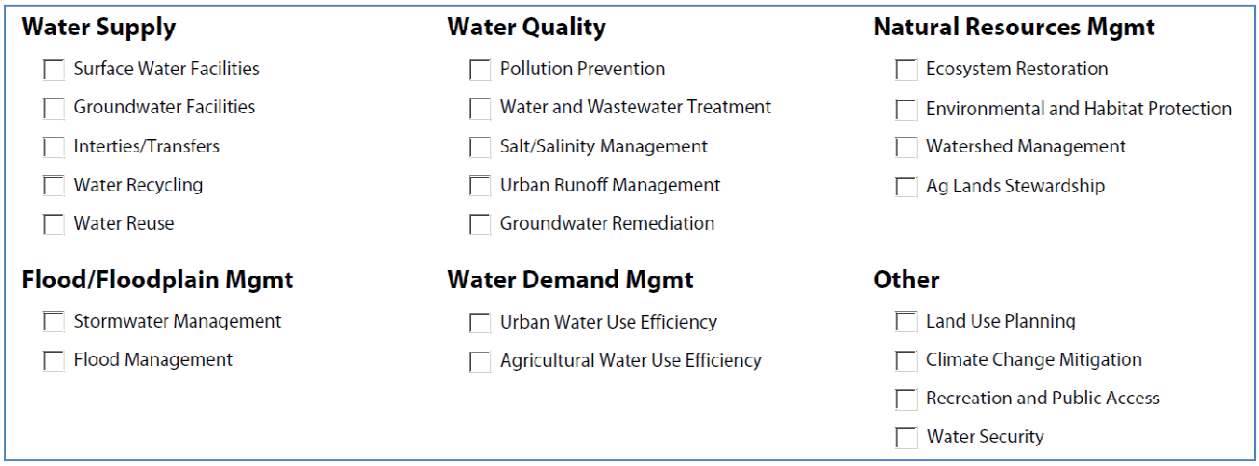

Figure 3-6. Objective Goal Areas

Description:

- Review the 2006 ARB IRWMP objectives.
- Review planning documents collected under Subtask 1.1 and survey stakeholders for information relevant to establishing quantifiable goals under each objective. For example, establishing a regional goal for recycled water use by some future date.
- Review other applicable elements (e.g., RMS) as identified in Subtask 1.2 and establish goals as appropriate under each objective area.
- Compare the results of the climate change analysis (see Subtask 1.3) with the draft objectives developed in Task 4 to identify where goals may not meet vulnerabilities and adjust as necessary.
- Develop new ARB IRWMP objectives with metrics consistent with IRWM Guidelines.

Deliverables:

- A draft TM will be prepared to present the revised objectives and metrics and the methodology for development. The data and information will be reviewed and revised as part of the Final ARB IRWMP Update (see Task 8).

Task 5: Develop a Web-Based IRWM Interface

Purpose:

Once objectives are established under Task 4, it will be critical to provide a platform for stakeholders to interact with and contribute to the IRWMP. The purpose of this task is to develop and implement a Web-based IRWM Project Interface to support the collaborative nature of the ARB IRWMP objectives and process. This Web-based tool with GIS capabilities will allow stakeholders to see the regional distribution of projects and programs. Ready access to the locations and types of projects proposed in the region will facilitate collaboration, integration, and attainment of multiple benefits. A user-friendly format will allow the IRWMP data to be distributed to stakeholders, while at the same time it will create a streamlined method of collecting and updating existing data. The tool will allow the IRWMP project database to be

easily maintained and updated with the latest project information and data. The interface will also help achieve considerable cost efficiency over time as the current method of requesting and receiving projects into the database is labor intensive. Finally, the interface will ensure that IRWM planning is a living process by allowing for continued adding, evaluating, and prioritizing of projects.

Description:

Subtask Task 5.1: IRWM Project Interface Development

Develop a Web-based IRWM Project Interface to facilitate collaboration among stakeholders within the region to enhance cooperation and the benefits realized through project completion. This project interface will contain the following features and capabilities:

- The map interface will contain the ability to enter projects in the region as either a point location or a polygon representing the boundaries of a project area.
- The map interface will have interactive features including layer control to turn on and off various regional layers and the ability to view projects based on varying characteristics (for example, viewing by objective, project status, or organization proposing a project).
- The user will have the ability to view summary project information by hovering on the point or polygon location on the map.
- The user will have access to more detailed information by clicking on the project site location on the map.
- The website will contain an announcements tool that allows a public user to submit an announcement request to the administrator to post an announcement on the website, such as grant notifications. Once the administrator approves the request, the announcement will be posted to the website.
- The website will also contain informative links including access to the ARB IRWMP and a login for the IRWMP Project Database.

Subtask 5.2: Project Web-Based Database Development

Develop a project database to manage the submittal, evaluation, and tracking of projects within the region. The project database will be designed such that it may track projects for multiple grants to provide the broadest knowledge base for the region. In this manner, it will integrate the information for all the IRWM projects for the region.

The database will contain multiple levels of user access, including: administrative, super user, and public user. The login page will contain tools to allow a public user to create an account. Super user accounts must be created by the administrator. The home pages for these users will be customized according to their privileges and role.

Following are features of the system:

- ***My Projects.*** The user will have the ability to add a new project to the database and view it on their My Projects page. The user will have the ability to save, submit, or delete projects. They may continue to edit and save a project until it is ready for submittal. Upon submittal, the project will display with all the other projects. The user may share his/her projects with a defined list of users such they may also edit the project.

- ***All Submitted Projects.*** The user will have the ability to view a list of all the submitted projects. They may open a project in read-only mode or view the location on the map interface.
- ***Map View.*** The map view will display the location of the project on the map interface. The user may click on the map or draw a polygon on the map to outline a region and add a new project at that location. The user may click on a point or polygon location and view the projects details for other submitted projects.
- ***User Management.*** The user may create, update, and delete public and super user accounts.
- ***Project Evaluation Tool.*** The system will have the ability to evaluate and prioritize projects based on criteria when specific future funding opportunities arise. Even though all projects will be evaluated and assigned an initial ranking based on its priority to the region (as described in Tasks 6 and 7), it will be necessary to have a flexible system that can match up projects in the IRWM database to various criteria specific to other future funding opportunities to help ensure project implementation. The tool will include a customized interface to allow the administrator to select criteria to suit the needs of the grant scoring guidelines. The administrator will also have the ability to track how the project evolves as it progresses through the selection process.
- ***Project Tracking.*** The user will be able to collect and view the long-term project success based on defined benefit metrics gauged against the grant objectives. The system will have the ability to collect documentation and communication during the project implementation. Upon project completion, the project proponents will submit final project information such that it may be compared to the initial project information to be available for reporting. File upload tools will be used to upload final reports and other documentation.
- ***Reports.*** The user may create customizable reports using an advanced query tool. The output of the reports may be customized according to the user's selections. This tool will facilitate legislative and project benefit reporting. The reports may be printed in a printer-friendly format or exported to Excel.
- ***Website Management.*** The user will have the ability to approve requests to post announcement information on the website interface. Upon approval, the information will be posted to the website. The administrator will also be notified via email when the request is submitted by the public user.
- ***Search.*** The user will have access to a search tool to search for projects based on high-level criteria.
- ***My Profile.*** The user will have the ability to update their profile information including contact and password information.

The proposed feature access for each user type is presented in Table 3-2.

Table 3-2. Web-Based Tool Features

Feature	Public User	Super User	Administrator
My Projects	•		
All Submitted Projects	•	•	•
Map View	•	•	•
User Management			•
Project Evaluation		•	•
Project Tracking		•	•
Reports			•
Website Management			•
Search	•	•	•
My Profile	•	•	•

Subtask 5.3: Training and Technical Support

This task includes preparation for and completion of a 2-hour training session for RWA staff, a 2-hour training session for stakeholders, and up to 20 hours of technical support to answer questions and complete minor system enhancements, as needed.

Subtask 5.4: Project Management and Coordination

This task includes time for management and coordination of the project with RWA staff, as well as preparation of progress reports and invoices. This task will include preparation for and attending four to five meetings or conference calls with the project team members.

Deliverables:

- Installation of Project Database and website codes and database on third-party hosting environment.
- A 2-hour training session for RWA staff.
- A 2-hour training session for stakeholders.
- 20 hours of technical support.
- A description of the Web-based IRWM Project Interface will be included into the Final ARB IRWMP Update (see Task 8).

Task 6: Add New/Update Existing Projects

Purpose:

The purpose of this task is to add new and update existing projects and programs in the ARB IRWMP Project Database. The newly developed Web-based interface described under Task 5 will be an essential tool to completing a comprehensive update of projects to meet the IRWMP objectives. The status and information on existing projects will be updated and new information consistent with Proposition 84 Guidelines and the updated objectives (see Task 4) will be collected. Information and data from new projects and program will be collected, using the Web-based interface described in Task 5. Based on past experience, it is assumed that some direct follow-up for clarification on some of the projects will be necessary under this task.

Description:

- All of the current projects and programs in the ARB IRWMP Project Database will need to be updated. The current database contains approximately 180 projects and programs from 28 different project proponents. Each of these projects will need to be updated for project status and any information changes. This information update will be accomplished by contacting the appropriate project proponent or using the Web-based IRWM Project Interface (see Task 5).
- It is anticipated that a minimum of 100 new projects will be collected, primarily using the Web-based IRWM Project Interface (see Task 5), and some of these will evolve as they are considered by the Planning Forum.

Deliverables:

- The ARB IRWMP Project Database will be updated. The various tables of project information will be included in the ARB IRWMP Update (see Task 8).

Task 7: Project Prioritization

Purpose:

The purpose of this task is to prioritize the ARB IRWMP projects and programs after the new and updated data and information is collected in Task 6.

Description:

- In prioritizing projects, the ARB IRWMP will consider the Proposition 84 Guidelines, regional objectives, RMS, economic and technical feasibility, benefits to DACs and tribal communities, effects on climate change and GHG emissions, and multiple benefits. The Project Prioritization Process, as described in the ARB IRWMP and Section 1 will tier each project and program. The tiers will be defined by overall feasibility, the degree to which a project meets the objectives, and readiness to proceed. Tier 1 projects would be considered the most feasible, have demonstrable benefits towards meeting objectives, and be ready to proceed within the next two years: Tier 2 projects would be somewhat likely to proceed within 2 to 5 years; and Tier 3 projects would be those that are uncertain to proceed, or are potentially out further than five years from proceeding. Within each tier, projects would be further ranked based on factors including, but not limited to: the initial ranking during the project evaluation process, projects that meet multiple objectives, the amount of existing funding and remaining funding needed, and the potential number of partners involved. The IRWMP would then identify known sources of funding and recommended strategies for implementing Tier 1 projects. Where Tier 2 or Tier 3 proposed projects may have significant benefit in meeting objectives, the region will seek to prioritize efforts to accelerate their implementation.

Deliverables:

- Updated draft project prioritization tables will be developed and reviewed. The tables will be revised, as necessary, as part of the Final ARB IRWMP Update (see Task 8).
- A description of known funding sources and strategies for implementing Tier 1 projects will be included as part of the Final ARB IRWMP Update (see Task 8).

Task 8: Prepare ARB IRWMP Update

Purpose:

The purpose of this task is to incorporate, organize and present the information, analyses and data gathered in the preceding tasks to complete the ARB IRWMP Update. The preceding tasks will result in an IRWMP that meets the IRWMP Standards. Note that RWA is intentionally limiting the number of hard copies of the Final ARB IRWMP Update. This is primarily because the ARB Region believes that the heart of the ARB IRWMP will be the on-going interactions and coordination that will result from providing the Web-based interface and Stakeholder/Planning forums where stakeholders can interact and develop new integrated water management. The Final ARB IRWMP will be available for download on the RWA website. Copies will be provided to stakeholders requesting an ARB IRWMP that do not have access to the internet.

Subtask 8.1: Draft ARB IRWMP Update

Description:

- The Draft ARB IRWMP Update will incorporate all of the previous tasks and be in compliance with the Proposition 84 Guidelines.
- The Draft ARB IRWMP Update will be provided in MS Word format for review.

Deliverables:

- Electronic Draft ARB IRWMP Update for distribution and review in MS Word format.

Subtask 8.2. Final ARB IRWMP Update.

Description:

- Address any comments received during circulation of the Draft ARB IRWMP Update.
- Develop the Final ARB IRWMP Update.
- Prepare presentations for formal adoption of the Final ARB IRWMP Update by the RWMG.

Deliverables:

- Place the Final ARB IRWMP Update on the ARB IRWMP website as a PDF file with appropriate bookmarks.
- Print up to 10 hard copies of the Final ARB IRWMP Update.
- Print up to 100 ARB IRWMP Update brochures for stakeholder outreach.

Task 9: IRWMP Project and Grant Management

Subtask 9.1: Project Management

Purpose:

The ARB IRWMP Update will require management of all the tasks described in this scope of work.

Description:

- The project management tasks include:
    - Coordination with DWR
    - Coordination with the RWMG and the various levels of governance (Stakeholder Forum, Planning Forum, Management Committee, and Advisory Committee)
    - Tracking the budget, schedule, and process of the ARB IRWMP Update and implementation

Deliverables:

- Monthly budget and schedule progress reports of the ARB IRWMP Update to the RWMG

Subtask 9.2: IRWMP Grant Management

Purpose:

The purpose of this task is to prepare monthly invoice packets and quarterly reports that will be submitted for grant reimbursement.

Description:

- The quarterly reports will describe the following:
    - Work performed during the reporting period including unforeseen conditions
    - Work planned for the next reporting period
    - Status of project budget
    - Status of project schedule including milestone reached during the reporting period
- Invoice packets will be developed up to monthly for DWR.

Deliverables:

- Progress reports and invoice packets will be submitted for grant reimbursement as per requirements of the DWR funding agreement.

3. PROGRAM PREFERENCES

The adopted 2006 ARB IRWMP and the proposed update will assist in meeting the IRWM Program Preferences as identified in the Guidelines. Table 3-3 lists the IRWM Program Preferences and where they are addressed in the adopted ARB IRWMP. The table also identifies where the Program Preferences will be further addressed through the Work Plan of the proposed IRWMP Update. A more detailed description of how these preferences are addressed in the adopted ARB IRWMP and the proposed ARB IRWMP Update is presented in the following sections.

Table 3-3. IRWMP Program Preferences

Program Preferences	Addressed in 2006 ARB IRWMP	Updated by Work Plan Task
Regional projects and programs	Chapter 5	Tasks 3, 5, 7
Integrate water management programs and projects within the hydrologic region	Chapter 5	Tasks 2, 3, 4, 5, 7
Resolve significant water-related conflicts	Section 3.4	Tasks 2, 3, 4, 5, 6, 7
Contribute to the attainment of one or more of the CALFED Bay-Delta Program objectives	Section 11.7	Tasks 3, 4, 6, 7
Address critical water supply or quality needs of DACs	Chapter 5	Task 2
Integrate water management with land use planning	Section 12.3	Task 2
Stormwater and flood water management projects that provide multiple benefits	Chapter 5	Tasks 3, 4, 7
Address Statewide priorities (drought preparedness, water use and reuse efficiency, climate change response, environmental stewardship, integrated flood management, water quality protection, tribal water and natural resources, and equitable distribution of benefits).	Chapters 4, 5, 11	Tasks 1, 2, 3, 4, 5, 6, 7

Key:
ARB IRWMP = American River Basin Integrated Regional Water Management Plan
DAC = disadvantaged community

3.1. Regional Projects and Programs

The adopted ARB IRWMP identified some 180 projects and programs by 28 different stakeholders throughout the region. The ARB IRWMP Update will expand upon this by: (1) increasing the number of stakeholders participating in the IRWM effort (Task 3); 2) expanding and updating regional objectives (Task 4); (3) developing a user-friendly web-based interface to encourage stakeholders to add regional projects (Task 5); and (4) prioritizing projects that achieve regional benefits (Task 7). The update is expected to identify a minimum of an additional 100 projects.

3.2. Integrate Water Management Programs and Projects Within the Hydrologic Region

As stated in Section 1, Background, the ARB IRWMP builds on a foundation of regional planning, including the Water Forum Agreement, which identified seven integrated elements in great detail. The adopted ARB IRWMP identified some 180 projects and programs by 28 different stakeholders throughout the region. The minimum criterion for being included in the

adopted IRWMP was to include at least three different priorities or preferences. The ARB IRWMP Update will greatly expand upon this by: (1) establishing objectives, based on extensive stakeholder input (Task 2 and Task 3), with measurable goals (Task 4); (2) developing a web-based interface where stakeholders can identify where others may have similar or related projects that could be further integrated (Task 5); and (3) prioritizing projects based on their ability to demonstrably contribute to achieving goals and objectives of the updated IRWMP (Task 7). The update is expected to identify a minimum of an additional 100 projects. It is also believed that this process will result in projects that are already more fully integrated as they are brought into the ARB IRWMP.

3.3. Resolve Significant Water-Related Conflicts

As described in the adopted ARB IRWMP (Section 3.4), the conflict resolved in this region through the historic Water Forum Agreement of April 2000 is one of the best examples of resolving intra- and inter-regional water-related conflicts anywhere. Most of the projects in the ARB IRWMP were in response to resolving that conflict. The proposed update will greatly enhance this by: (1) identifying other potential water-related conflicts throughout the region through outreach with DACs and other stakeholders (Task 2 and Task 3); (2) identifying goals and objectives aimed at resolving these conflicts (Task 4); (3) creating a user-friendly web-based interface and collecting information on these projects to achieve the objectives (Task 5 and Task 6); and (4) prioritizing projects that help resolve water-related conflicts (Task 7).

3.4. Contribute to the Attainment of One or More of the CALFED Bay-Delta Program Objectives

As described in the adopted IRWMP (Section 11.7), the ARB Region lies at the heart of a CALFED solution given its proximity to the Bay-Delta. Projects identified in the IRWMP provide substantial flexibility to the operations at Folsom Lake allowing the reservoir to be a key piece in managing the broader State and federal water systems for meeting water supply and water quality objectives in the Bay-Delta. The co-equal objectives of the Water Forum Agreement – reliable water supplies and a healthy ecosystem – support the analogous goals for the Bay-Delta. The RWMG is actively involved in meetings of the Delta Stewardship Council and Bay-Delta Conservation Plan, providing for an ability to continue to contribute to objectives for the Bay-Delta as a whole. The proposed update will further improve potential benefits to meeting this program preference by: (1) identifying additional stakeholders with proposed projects that can further contribute to meeting CALFED objectives (Task 3); (2) establishing goals and objectives that will contribute to meeting the CALFED objectives (Task 4); and (3) identifying (Task 6) and prioritizing projects that can help meet the CALFED objectives (Task 7).

3.5. Address Critical Water Supply or Quality Needs of Disadvantaged Communities

The adopted ARB IRWMP identified the locations of DACs (Section 2.7.5) in the ARB Region and assigned a preference point for projects that helped address DAC water supply issues (Section 5.1.3). While the ARB Region is fortunate in providing high-quality water for all citizens, the proposed ARB IRWMP Update will provide substantial improvements to addressing water supply and quality needs of DACs by: (1) conducting extensive outreach to identify and include representatives of DACs in the IRWM process; (2) identifying where assistance or barriers to providing assistance to DACs exist in the region; (3) identifying where lack of

infrastructure or service fees may hinder development or redevelopment in DACs; and (4) identifying potential projects or programs that could directly benefit DACs within the ARB Region. These steps are more fully described in Task 2 of the Work Plan.

3.6. Integrate Water Management with Land Use Planning

The adopted ARB IRWMP addresses coordination on local land use planning (Section 12.3). Local water purveyors work closely with cities and counties during general plan development. Local water providers are working closely with land use authorities in implementing the Model Water Efficient Landscape Ordinance. Additionally, local purveyors worked with the SACOG in developing a Regional Transportation Blueprint adopted in 2008 that considered water supply planning in recommending major transportation infrastructure projects. Finally, the historic Water Forum Agreement of April 2000 serves to identify planned growth and water supply infrastructure to the Year 2030. To improve on the land use planning elements of the adopted ARB IRWMP, RWA is coordinating with SACOG to identify where infrastructure issues may impede development or redevelopment in DACs throughout the region (Task 2). When complete, this information will be provided to local land use planners and will be incorporated into water and wastewater priorities in the region.

3.7. Stormwater and Flood Water Management Projects that Provide Multiple Benefits

The adopted ARB IRWMP includes stormwater management and flood management as IRWM objectives (Chapter 5). The proposed ARB IRWMP Update will greatly improve on this by: (1) conducting additional targeted outreach to stormwater and flood managers in the ARB Region (Task 3); (2) establishing quantifiable goals and objectives for stormwater and flood management (Task 4); and (3) establishing priorities for those projects that provide multiple benefits (Task 7).

3.8. Address Statewide Priorities

Statewide priorities as identified in the initial IRWMP guidance issued by DWR in November 2004 are highly integrated throughout the adopted ARB IRWMP (Chapters 4, 5, and 11). They were used to consider strategies and priorities for evaluating projects submitted for consideration in the IRWMP. The eight statewide priorities listed in the IRWM Guidelines will be substantially addressed as described below based on tasks identified in the Work Plan for the proposed IRWMP update.

Task 3 of the proposed Work Plan is to ensure stakeholders are being actively engaged from all of the discipline areas to ensure that goals and objectives are being developed in each of the areas. Figures 5 and 6 in Section 2 of the Work Plan show the current objective categories and goal areas. Based on establishing these objectives projects will be identified and prioritized during the IRWMP update (Tasks 4 through 7). The update of existing projects and the addition of a minimum of an additional 100 projects expected during the IRWMP update will help the ARB Region further address the Statewide priorities.

To demonstrate how the adopted ARB IRWMP will help meet many of these priorities, examples of projects currently being constructed with funding assistance through DWR's Proposition 50 Implementation Grant Program are provided under each priority below. When complete, these projects worth more than $150 million, assisted by the $25 million grant, will

provide demonstrable benefits. The ARB IRWMP Update is expected to identify and refine many projects of a similar nature.

- Drought preparedness – Projects include the construction of the 185 million gallon diversion at Freeport; expansion of the Roseville Water Treatment Plant (WTP) by 35 million gallons per day (MGD); expansion of the Carmichael WTP by 5 MGD; construction of up to six high capacity groundwater wells by various agencies; installation of a pipeline by the City of Sacramento to serve an area that currently only has access to groundwater. These types of conjunctive use facilities are essential to conjunctive use operations that will result in being prepared for drought. The region demonstrated its preparedness during the latest drought by actually transferring water to the State Drought Water Bank in 2009.
- Use and reuse water more efficiently – Project include the expansion of the Sacramento Regional County Sanitation District Wastewater Treatment Plant by 5 MGD, expansion of the City of Lincoln wastewater distribution system to deliver an additional 1,400 acre-feet per year to non-potable landscaping uses.
- Expand environmental stewardship – Projects include the acquiring and improving the Gardenland Sand and Gravel Mine Site (122 acres) by the Sacramento Area Flood Control Agency (SAFCA) on the American River Parkway and returning the site to the river corridor and creating recreational uses; a study by The Nature Conservancy to obtain information on Cosumnes River recharge properties for the purpose of finding means of ensuring river flows at the times of year that it most critical to fish spawning.
- Practice integrated flood management – The SAFCA Gardenland Project will also provide integrated flood benefits by ensuring that the land is available as to serve as proper floodplain during high-flow events.
- Protect surface water and groundwater quality – The SAFCA Gardenland Project will also improve water quality by eliminating a source of potential mercury-containing sediments that are now exposed from the mining operations; the Sacramento County Water Agency will conduct a pilot study to study stormwater capture in a former mining pit on the eastern portion of the basin during storm events. The study will evaluate recharging stormwater into the underlying aquifer or releasing the water through an ecosystem designed to improve the quality of stormwater runoff.

Task 1.3 would include a comprehensive analysis of the ARB Region's vulnerability to effects of climate change and will also inform the establishing objectives (Task 4) during the ARB IRWMP Update. Task 1.3 will also identify response actions taken by stakeholders to mitigate the causes of climate change (reduce energy consumption, reduce GHG emissions, etc.). These tasks in combination with identifying and prioritizing projects that address these issues will substantially contribute to meeting the Statewide priority of:

- Climate change response actions

Tasks 2 and 3 of the proposed IRWMP Update will conduct extensive outreach to DACs and other stakeholders, including tribal interests. These tasks will identify issues and solutions associated with these stakeholders groups. Tasks 4 through 7 will ensure that objectives and goals are established that will result in identifying projects that address the following Statewide priorities:

- Improve tribal water and natural resources
- Ensure equitable distribution of benefits.